WESTERN POWER AA5 PUBLIC FORUM

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TRANSCRIPT

JENNESS GARDNER

Good morning and welcome to the ERA's public forum on Western Power's proposal for its fifth access arrangement. I am Jenness Gardener, the CEO of the Economic Regulation Authority. The two fine gentlemen whose faces you can see here are going to be our speakers. So we have, to my left, Steve Edwell, the Chair of the Economic Regulation Authority and, to my right, Sam Barbaro, the CEO at Western Power. So I will introduce them more fulsomely later on.

I'd like to start though by just acknowledging that we're meeting today on the lands of the Whadjuk Noongar people, and I wish to pay my respects to their Elders past and present. I think the fact that we're at the cusp of the shift of seasons from Bunuru to Djeran is quite welcome because we've moving from all of the challenges that the hot season has brought us to those that the new season will bring us as well as we deal with the transmission, distribution and generation of energy more generally.

Thank you very much for meeting online. We felt that in the current circumstances that this would be the best way to ensure that as many people as possible could join and stay safe. I wanted to let you know that we are recording the meeting so that we can refer back to any helpful comments and questions later.

The plan for the morning is that we're going to start with our Chair, Steve Edwell, explaining the role that we're regulating here in relation to Western Power and why, and to talk about some of the key issues that we're going to be focusing on for the review. I'm then going to ask Western Power's Sam Barbaro to discuss the Western Power proposal and to take questions. We'll then have our project lead of the ERA, Elizabeth Walters, look at some of Western Power's proposed expenditure and talk you through the review process in a little bit more detail. We'll come back to me, to explain the process from here from the ERA's perspective, and then how to make a submission to our process and find out more information.

As we go through the presentations, please feel free to pop any questions that you have in the chat function of the meeting; we'll be monitoring that. If you see a question that you

like the look of and you'd like to support, if you could please put a thumbs up next to it because that will enable us to determine which questions are particularly popular and we'll prioritise those and let those be the ones that get answered as quickly as we can.

I'm now going to hand over to Steve Edwell. He's been the Chair of the organisation, I think it was since August you commenced as the Chair, but he's obviously well known to all of you in his role both with chairing the Energy Transformation Task Force, and prior to that here, as well as a former member of the board. So I'm not sure how many access arrangements Steve has done, no doubt he'll let you know. Not sure it's as many as Sam who told me, I think, that he's done all of them. But between them, we've certainly got enough background information here to be able to answer anything I think you can possibly want to know. I'll hand over to you now, Steve.

STEVE EDWELL

Thanks, Jenness. I'll let Sam take the record on this one, I think he's probably done one or two more than I have. But welcome, everybody, to this public forum on Western Power's Access Arrangement number five.

This forum marks the beginning of the ERA's review of Western Power's access arrangement, which covers the period 2022 to 2027. Someone once famously said, certainly not the beginning of the end, but perhaps the end of the beginning. This is a major undertaking, both for the ERA and Western Power.

As most of you would know, and I have looked through the attendance list, we've got the usual industry stakeholders, but we've also got a smattering of people who probably aren't quite familiar with the economics of access regulation, so I just wanted to spend a little bit of time on that.

Fundamentally, because Western Power owns the only electricity network in the Southwest, and is, therefore, a natural monopoly, the legislation requires that its pricing be independently determined by the ERA. So we do this through what we call access arrangements. We do these every five years, and as I said, it takes us about 18 months from go to whoa.

An access arrangement sets out the terms and conditions including the prices for Western Power's direct customers, and these include electricity generators, major mining, industrial electricity users, and of course, electricity retailers, and the prices that Western Power charges to these, certainly retailers, in particular, are passed on to their electricity customers. So ultimately, all users in the Southwest of the State here are impacted by this decision on AA5. And those network charges traditionally make up about 45% of the average residential electricity bill. So a material proportion.

Now Western Power presented its five-year access proposal for the period '22 to '27 on the 1st of February. And I say 'proposal', because the way the access framework works, it's incumbent upon Western Power to propose its plan, and primarily, it's a plan for

investment and operational and maintenance expenditure on the network over a five-year period, and then it's the role of the ERA to respond. So that's what we call the proposed respond mould.

So, fundamentally, our role is to assess Western Power's proposal against the requirements of the electricity network access code, and at a very high level, these requirements focus on the efficient, safe, and reliable operation of the electricity network. And more recently, we've had the addition of a need to consider the environmental consequences of electricity supply and use. So we at the ERA will be testing all aspects of Western Power's proposal against this criteria.

The main purpose of today, as Jenness said, is to provide Western Power the opportunity to outline its expenditure plan for the business, and any changes that it proposes to make to access arrangements, to its fundamental access arrangement over the five-year period.

I emphasise that, at this early stage, the ERA has not made any determination on any aspect of Western Power's proposal. But we have, as I figure most of you would be aware, recently released an issues paper, which does provide an overview of the proposal, and identifies and invites submissions on some important matters that we at the ERA will be focusing on during our evaluation.

The next major point of output from us is a draft determination, which is forecast for September this year. So we're wanting to maximise the input from stakeholders to assist that process.

So that's pretty well all I wanted to say about the process. I just wanted to use the rest of my time talking about a few areas of particular importance to the ERA, and I've got five listed here just to briefly comment on. The energy transformation, climate change, Western Power's security and reliability performance across the network. Fourthly, customer preferences, and finally, just a few words on network tariffs.

Now, I guess having just come out of my previous roles chairing the Transformation Task Force, people would expect me to be focusing on the energy transformation, and of course, that's correct. There really are two big issues as we see it, or two big picture scenes for this AA5, as we see it, the energy transformation being one, and climate change being second. And I think these two factors combined make the environment for the ERA AA5 determination very different from previous periods.

The electricity market we see today, as many of you would appreciate, is fundamentally different from what we envisaged even five years ago, and it's a fair bet, I think, that the market come 2030 will be vastly different from even our expectations here in 2022. The revolution in renewable generation technologies is rapidly transforming the way we have historically produced and consumed our power. The electricity supply chain is undergoing profound change, and for a century, that electricity supply chain has been designed around very large-scale thermal generation facilities situated, you know, pretty remote from major

demand centres. And, of course, those major demand centres comprising passive consumers.

But what we are now increasingly seeing is small scale renewable generation located in the distribution network right in the heart of Western Power's network. And of course, most predominantly here is rooftop solar, which has turned, in a very short space of time, households and businesses, into generators as well as demand points. And distributed technologies, including advanced meters, smart home systems, energy home systems, remote power systems, standalone power systems are seriously engaging electricity consumers in the electricity market in a way that's never happened before. And of course, we have electricity storage starting to infiltrate the grid, and of course, to come is electric vehicles.

And all this means that the quantum and the way that power flows through the Western Power network is significantly changing. What used to be a one-way flow of energy from big industrial generators into the network and through to homes is now a multi-directional flow. As customers become generators, and as the amount of renewable generation continues to grow solar PV is also driving very low daytime network demand. It's turning certain terminals, Western Power's terminals, at times, into net generators, and it's also doing things like shifting the evening peak. So the paradigm we're operating in for AA5 is fundamentally different from all of those previous access arrangements that Sam and I have been involved in. And I'll let Sam, no doubt, shortly say more about those impacts.

But the evidence, both globally and nationally, I think, pretty well accepted is that this transformation will continue with undoubted consequences for networks expenditure over the AA5 period, and indeed beyond. And Western Power really has had to articulate its response to this transformation in this AA5 proposal. And there are certainly very major challenges both for Western Power and to the ERA in making regulatory investment calls and regulatory calls in this rather dynamic environment.

The ERA is very interested in Western Power's response to this change. In particular, we've encouraged their board to convey through this response the vision of the business, and to explain how its proposed expenditure is in the context of this vision.

So the transformation really raises a whole bunch of very critical questions. I just wanted to highlight a couple. You know, and they're easy to say, but very fundamental to work through. How does Western Power see the future of the grid? Is Western Power's strategy for a modular network a reasonable response? So the modular network, as Western Power sees it, will comprise a tightly meshed, increasingly underground component, a hybrid component incorporating new technologies, and thirdly, a standalone autonomous area consisting of standalone grids and power systems.

So what are the risks of getting this vision and response wrong is a key question. Does Western Power's response position to this transformation, does it position the network for a transformation that will really go beyond, well into, 2030. And is Western Power's expenditure plan, reasonable or otherwise, and if not why? And fundamentally, because

this is all about electricity users. How will electricity users benefit is something which we'll be really focusing on.

And getting the vision and expenditure response wrong can have very material consequences for users, it could result in investment in long-term assets that may not be regulated, or sorry, may not be required or not required for the full term of their technical life. Existing assets could be replaced earlier than necessary based on an incorrect view of the future, or investment could not occur early enough to do with the transformation as it rapidly occurs.

So all those things, I think, make this access arrangement different to past ones, certainly a lot more risk.

Just a little bit on climate change. So look, my view on this is widely known. I have been a climate change watcher for decades, and the scientific evidence of climate change is unequivocal. The Bureau of Meteorology has recently advised the independent review of the Christmas period outages across Western Power's network, that extreme weather conditions are likely to occur more frequently in the future, then, as a result of climate change. And an electricity network which is vulnerable to climate change, unduly vulnerable, has consequences clearly for the security of supply to electricity customers. And there's already clear evidence, as we know, of extreme weather events impacting on outages over the past two years.

So Western Power's proposal contains expenditure for a number of climate change related initiatives, and these include bushfire management, and obviously, pole management against the causation of ground fires.

Western Power's proposal also proposes initiatives to support decarbonisation. Although it's not clear to us whether expenditure in this area is justified solely on the basis of decarbonisation, and the initiatives that this is talking about here, is enabling the network, includes enabling the network to support 50% renewable energy by 2031. And other things like electrifying their vehicle fleet over time and replacing street lights with LEDs by 2029. So we're interested in the community and participant response to Western Power's proposed actions in response to climate change.

But I'll just turn to reliability and security. Now, the access arrangement, as many of you would know, incorporates service standard benchmarks, and these benchmarks are set for four categories of feeders across the Western Power network. And in addition to these benchmarks, there's an incentive mechanism which includes financial rewards and penalties for Western Power to achieve even higher targets, performance. And during AA4, Western Power has generally performed better than the benchmarks. But in some cases, at least, worse than the targets.

One problem we see with the service standard framework in the access arrangement is that it's all based on average performance. And our view is that this can mask under-

performance in certain locations. And we've signalled this as a potential area for improvement in the issues paper, and we want to talk to Western Power about this.

And I note that it's also been identified in the recent independent review on the Christmas outages by Michelle Shepherd. One of the recommendations from that report is for Western Power to improve the information it provides on its reliability performance, including the worst-performing feeders, major event days, use of customer-friendly language to identify feeders in terms of where they're located, and keeping customers aware of causes of reliability issues, and what the plans to address those issues are.

So Western Power's security and reliability performance was already a major focus for us in the review, as identified in the issues paper. And we're particularly interested in any comparison we can draw between the top-level framework, the top-level network reliability issues or performance, which looked pretty good, and the gap then to actual experience of customers. So we'll be looking, amongst other things, at a more localised performance standard regime in light of the recommendations of the Shepherd report, and what we've reflected in the issues paper.

And I also intend to visit some of the regional areas on the fringe of grid to get an understanding from those customers as to what their experience on reliability is. I'll be doing that over the next couple of months.

Just a couple of comments on customer preferences. Now, being in the space of regulation for a while, and it's my experience that, you know, we've always been very frustrated by, we being the collective of regulatory agencies globally, really, but certainly nationally, been very frustrated by inadequate involvement of customers in the access review period. And over time, we've explored various models, but I really think it's fair to say that none of them have really been successful.

Now, this inadequacy of not having sufficient customer buy-in has probably been more tolerable in previous access arrangements than is now the case, because we've now got users that are far more empowered in their electricity use decisions, and indeed their investment in renewable assets. And, interestingly, there's been some very innovative approaches in overseas jurisdictions to better engage users in regulatory decision processes, which I think we will need to reflect on in future access arrangements.

So Western Power's proposal, at this point though, outlines its process for customer and reliability engagement. It's certainly gone through a pretty comprehensive process, and it also indicates how the outcomes of that process has influenced its expenditure priorities.

So we're interested in your feedback on whether Western Power's expenditure proposals are consistent with customer preferences, and in particular, we note that the work that Western Power did with customers preceded the Christmas, sort of, summer network outage period. So I don't know whether they've changed their position on some of those things, Sam might want to talk about that.

Of course, the final area of customer engagement relates to ongoing communications with customers, particularly in times of power outages and extreme climate events. And here, Western Power is proposing to move away from the traditional call centre to more electronic modes of communication, on the basis that that's what they believe customers want. So we're very interested in this sort of customer preference, customer participation area. And obviously, any feedback we get from the muses on that would be very useful for us. And in particular, whether we see that Western Power's initiatives and expenditures align with consumer expectations.

And finally, just a brief word on network tariffs. Now, as an economist, of course, you'd expect me to say that we just love tariffs, which signal the most efficient use of any type of asset, so no different in respect of electricity networks. We've had some changes to the electricity access code in recent times, which requires Western Power to provide and develop efficient network tariffs. That's a good thing. And of course, we all know they provide better signals to the efficient use of the network and to investment.

So I read the section of Western Power's report with some interest, and particular interest, and of course, they're proposing a number of initiatives in terms of tariff structures, reducing variable charges and increasing fixed charges, the introduction of a very low, super off-peak tariff, which will occur between 9am and 3pm, and the development of new tariffs to provide better price signals for grid-connected batteries and electric vehicles.

And in our issues paper, we've indicated that we need to better understand, Sam, how Western Power intends to build some of these tariffs. We think that the initiatives are at a high level pretty good, but we need to understand the details, so we'll be wanting to work through with your team, hopefully, before the draft decision to understand what you're doing here a bit better. But in the meantime, of course, we're interested in getting any feedback from users on Western Power's tariff proposals.

So really, they're just five of the areas of interest. There, of course, are others, but we really are expecting and seriously inviting some good feedback that we can use as we go through the process.

That's all for me. I'll hand you back to Jenness.

JENNESS GARDNER

Thank you very much, Steve. Thank you, Steve, for that excellent introduction to the issues from the ERA's perspective. It's now my pleasure to welcome Sam Barbaro who's currently the acting CEO at Western Power. Sam, whilst he's taken on the role as the CEO fairly recently, he has some significant history with Western Power, having been there since 2007, I believe, and a member of their executive team since 2014.

I'd also like to remind you that if you'd like to ask questions, if you can please pop them in the team's chat. It's located on the top right. If you like a question, you can give it a thumbs up. We are really hoping to make this as interactive as possible. I understand it's

extremely difficult when you're in a virtual environment, but I'm sure we've all practised. So we'd like to encourage you to ask questions, and this is your opportunity to ask anything that you think would be of interest to you from either the Chair of the ERA, or Sam from Western Power. So we'd like to encourage you.

Over to you, Sam, and thank you.

SAM BARBARO

Thanks, Jenness, and thank you, Steve, that was a really nice, succinct summary of the issues we want to touch on today. And I have been part of all the access arrangements for Western Power, initially, as a consultant on the outside and then moving into the organisation and being part of the team that developed them. And then more recently, as part of the management team that oversees them.

One thing I can say is the maturity level, from the whole sector, in terms of access arrangements, has really, really developed over that time. And also, Western Power's maturity in terms of how it balances risk with the economics and balances reliability with the economics, and really focused on the customer needs. So we're really confident with where we are today that we have a really robust submission to support what customers are looking for.

And, see, we've sort of set up our submission very similar to the way in which ... our presentations are very similar to the way in which you have touched on the issues. So whilst there's 16 questions in the ERA's discussion paper, we've sort of lumped them into four main groups. And so our response to the changing energy landscape, customer experience, network tariff development and revenue path, and the rate of return. So very similar groups to the way Steve discussed our submission.

And just before I do start, I just also want to send our respects to the Whadjuk people and the Noongar Nation and extend those respects to any other First Nations people who are attending today.

I also want to let you know that, along with me, we also have Jackie Hall, our Chief Financial Officer, and Gair Landsborough, Executive Manager Asset Management, who are online, and they'll help out with any really detailed questions if we have some of those later.

I will try and move through my slides relatively quickly, because I know we're interested, and so is the ERA, in getting a really collaborative approach this morning and having a conversation.

One thing I will just touch on before I do start is that, as Steve mentioned, we're moving towards the modular grid. A lot of this is not something where we're moving without a careful and considered approach to why we think that's the right position to be moving in the future.

Over AA4, we've been conducting significant amounts of trials, significant trials in standalone power systems, we've had some trials in Kalbarri micro grid, and Perenjori backup battery. And the communities have been able to see how these things have performed, and not only how they performed in your steady state, but also how they performed in significant climate events, in particular, standalone power systems, and how they performed once Seroja hit. And we know that climate change is going to have more of those incidents.

So that's really provided our customers with an informed understanding of the technology we're proposing to go ahead with and their benefits. So when we talk about our community consultation, I think you'll see some of that come through, that our customers were very informed about the technology that we're using because they've seen it over AA4, and they've actually been able to experience it, we've been able to give them facts and figures around reliability, safety, and those things that go along with it.

So with that, we'll move to the next slide if we can. Thank you. This is a little bit about Western Power, I know most of the people online are aware of it, but I think it's important just to touch on a few things to show the costs, complexity and the needs of our network, and just to, sort of, set the scene a little bit.

So our traditional network, when you add streetlights, poles, and towers together, has well over a million structures that we have to maintain. It also has over 100,000 kilometres of power lines. And to put that in perspective, that's two times around the circumference of the Earth that we need to maintain. And our grid is the size of the UK. So where we're maintaining a network which is the size of a country, in some parts of the world. So it is a sizable network, in different terrain, and we'll come to that later, in different locations, in different weather patterns, that we have to maintain. And so that, in itself, creates significant challenges in terms of operations, and maintenance. And changing a network of that size doesn't happen overnight.

And so our proposal is to move to the new modular grid, and you can see that it is a very defined and planned-out process. But at the same time, we need to maintain the current network that we've got, as we transition to that. But the network is changing, we already have over one gig of solar-connected energy, rooftop solar, on our network. And when you look at that, just to put that into some perspective, Muja, at its peak was 854, I think, megawatts. We now have more rooftop solar than our largest thermal generator that we had on our system. And we now have 95, as I said before, 95 standalone power systems in our grid, which has given us lots of information, but also provided customers with a lot of information around what that looks like. And we plan to continue with that.

So that's a bit of the background. If we can go to the next slide. And as Steve pointed out, the supply chain, Western Power sits right in the middle of that, and it's changing, and it's changing significantly.

The network was set up for one-way flows, big, big power generation, thermal generation in remote locations, as Steve said, through to mums and dads and industry. And we're in the middle of that, delivering it.

We're still in the middle of delivering, but it's just now we have a different product that we have to deliver. So we still have large-scale generation that we're delivering, but we now have two-way flows. As we see, we have over a gig of rooftop solar, which is coming into our network. And that is not only two-way power, but it's also a different type of energy, with different characteristics that we're having to manage. So it's not as if we're producing a different energy from a different source of energy, which is exactly the same as thermal energy. Whilst we can still use it the same, it has very different characteristics, and I'll touch on that later, and we have to manage the way in which we use that energy very, very differently. And we'll talk about that.

And we still have our large scale energy, so it's not as if we're all moving to distributed energy where we're going to use rooftop solar and the large scale will disappear. We've recently connected 460 megawatts of utility-scale renewables, so wind farms and solar energy, and that's going to continue as we go forward, and no doubt there are some of those proponents online today, interested in what we're doing for them, as well as for mum and dad customers. So we can move to the next slide.

So our network really is broken into sort of three main parts, or three distinct networks that come together to form the Western Power network. The first is our transmission network, the second is our distribution network, and then there is our SCADA and communications network, and I'll talk about each of them just briefly.

Transmission network obviously carries our very high voltage, and it does two things for us. Firstly, it carries a large amount of electricity long distances to our load centres, and that's its primary purpose. But there are also some users that are connected to that network, some large generators obviously connected to it, but we also have some large minesites and refineries that are connected to it.

The rebuild cost of that network is about 12 billion, typically has a lifespan of 35 to 70 years, so a little bit longer than our distribution network because of the type of structures we use in that space. Just under 40,000 poles, poles and towers, and just under 8,000 kilometres in terms of circuit length. So a sizable network in its own right.

And then the next is our distribution network, which is the next slide. Thank you. The distribution network steps down our power, and then takes it from our substations to customers, over a million, you know, 1.2 million of those, our mum and dad customers, but still a large portion of that being industry and businesses.

The challenge and the importance and the opportunity with the distribution network is significant, because the distribution network is where we're seeing a lot of the distributed energy coming on board. So that's the rooftop solar, EVs, electric vehicles in the future, small scale batteries in the future. So there's a lot that's going to happen in the distribution

network, which once upon a time was a pretty static network and all the exciting things were happening in the transmission network.

But the other part of this network, which is really important, is it coexists with the community. So this network is the one which poses significant safety risk, and lots of reliability risk as well. And so safety for us is of utmost importance, and we really need to continue to focus on that, to make sure that the coexisting with the community is safe.

And this network has a $23 billion rebuild cost, lifespan of 30 to 60 years, nearly 800,000 poles, and nearly 100,000 kilometres of circuit length. And that's overhead and also underground. So significant, a very significant network.

And then the last is our SCADA and telecommunications network. Easiest way to describe, it's the eyes and ears of our network. So it allows us to understand what's happening on our network in real time, which is obviously really important, but it also allows us to do remote switching and remote operation of our network. Where once upon a time, Western Power needed to send vehicles and manpower out to remote locations to switch power around, we can now do that remotely, which is great for customers, but it's also great for safety.

And that network, we'll talk a little bit later, this network here has probably been the one where we sweated the most over the years and pushed the hardest. And so we'll talk about the expenditure level that we're going to have in our SCADA and telecoms, the network, and the reasons why.

To the next slide, please. So as I touched on, customers are at the centre of everything we do. Western Power doesn't develop its AA5 structure, or its strategy at all based upon what we think are the right things to do. It's based upon what our customers need, and our customers' requirements, and that drives what we do. And to get to where we are with our AA5 submission, we've undertaken significant community consultation, and we continue to refine this through each access arrangement.

This time, we met with more than 2,000 customers, and we engaged for more than 800 hours, and we're more sophisticated in the way we do that now, because we're also engaging with customer segments on our network. And it's making sure that we get a really good cross-section of all the segments of our customers, and our stakeholders to understand what they need, and how that overlaps.

And you can see that diagram which shows all our segments, and it's overlapped for a reason. Because our customers overlap, their needs overlap, but their needs are also slightly different, and so we take all that into account.

Now we have a video that we normally show in this space; we're not going to show it today because of time. If we have time at the end, because with questions, we might show that video. If we don't, what we'll do is we'll commit to send a link to that video to everyone

who's participated today and you can watch that in your own time. And it's got some really interesting, and really important information on how we've engaged with the community.

If we can just go to the next slide, because that's the video and we'll come back to that. So our AA5 proposal. Really what our customers have told us is that there are four key metrics, or four key outcomes that they want. The first one is a continued focus on safety, both community safety, but we do talk about workforce safety, and the community is very interested in making sure that our workforce is safe. And so that will always be a big focus of Western Power.

Reliable supply, very important to customers. As Steve mentioned, we've just had the inquiry into the Christmas outages, and that was an example of when reliability doesn't go the way that we would all like, how that impacts customers. And so very, very high on their list.

Facilitating more renewables. This is really driven by society's growing ideology to decarbonise our world. And the customers are really driving that, and we've seen actually that has really escalated since COVID. So we're really focused on that, and it makes up a big part of our submission.

And then affordable price outcomes. That's never changed in any of the access arrangements. Customers are sensitive to price increases, we're aware of that, and we'll talk about that later.

So our five-year proposal really seeks to, you know, in a really high-level summary, is smooth revenue of 7.5 billion over the five years, CapEx of 5.4 billion, and OpEx of 2.2 billion, and we'll touch on those. Next slide, please.

So as we move to the modular grid, we just thought we'd just quickly touch on that, show you the slide that shows what that looks like. Steve gave a good little summary of that, but as you can see, that sort of dark section next to Perth, that's going to be our meshed urban. So that's where there is really high density. And the conditions are also favourable to things like undergrounding. So that will be a very high-density meshed network of overhead, and undergrounding.

Then we move to the sort of the greyer section, again, slightly higher density than the light grey sections. That will be a hybrid, that will have predominantly overhead network, some underground but predominantly overhead, but also start to use some of that autonomous SPSs and microgrid s in the areas where it may be difficult to access, or very high bushfire risk, or other environmental impacts and we will start to use some of these new technologies to manage that. And then you get that light grey area, which is the autonomous network which will start to see greater and greater numbers of standalone power systems, micro-grids, backup batteries, where we start to take away a lot of the safety risk, take away a lot of the overhead lines, which are subject to environmental impacts and the impact reliability, and start moving to more bespoke solutions for customers, which will improve both safety and reliability outcomes.

And then our AA5 proposal, if we can just move to the next slide. How does our AA5 proposal compare to AA4? That's a question that's commonly asked. And this is a high-level summary. So our revenue of 7.5 billion that we're proposing is a 10% reduction, and that's primarily driven by a lower rate of return.

Capital expenditure is 5.4 billion. If there's a 30% increase, that's to address some of our technological challenges. Also to provide some new services and markets that the energy transformation is looking for, and customers are asking for. But it's also, as I said before, that's one reason why I talked about the size of our existing network. We still need to maintain that network. It's aging infrastructure, there's a transition period, we can't just leave it because we will have reliability and safety impacts. So we're going to be, during this access arrangement, really walking that fine line between transitioning to the new network, but still maintaining the current network.

And then operating expenditure is basically in line with what we've done in AA4, despite managing new obligations and functions. So we've absorbed all of those new obligations and functions into our existing expenditure rates.

Rate of return is about 20% lower, 4.73%, and our prices will rise by less than inflation. Prices rise by more than inflation in AA4, and AA5 price rises are about 50% lower than what occurred in AA4. And again, we'll talk about that a bit more.

So the issues paper, we go to the next slide, the issues paper, again, six key themes. I won't read through all these, you can probably read them faster than I can speak to them. But really those tiles, forecast investments, customer experience, managing uncertainty, tariffs and revenue path and return. That's what we're going to talk about the issues, and we're going to show you how we're going to address each of those key themes in the remaining slides.

So the first one is our response to the changing energy landscape. If you can just skip to the next slide. And that's really going to focus on these two tiles: the forecast investment and managing uncertainty.

If we can go to the next slide, which shows us a representation of customer choice really driving to decarbonisation, and really driving new technology, and a new way of working for Western Power. And one of the things, I've been at Western Power, yes, for some time, and I've been involved in a number of access arrangements. The benefit for me and a lot of the people at Western Power, who have been through a few of these is we have seen the context change dramatically. And we know that the external context changing the way it is, we know that we can't keep doing the same thing. Because what we were doing in the past for that context will not work for the future context. And this shows you what we are having to and what we will have to deal with going forward.

We know that EVs will start to outsell combustion engines in the near future. We know hydrogen is a big focus for this State. There's going to be a huge energy demand. And we're going to make sure that our system is ready in the areas where that hydrogen

production is going to occur. If we want to truly be as our State Government, and our industry wants, to be a leader in hydrogen across the world.

Greater than 70% of generation capacity's going to be renewable by around 2040. So not that far away. So we've really got to change the way in which we operate. And I'll talk a bit more, as I said before, about the characteristics of that energy. And then we're moving towards zero emissions. That's government initiative, but as I said before, customer ideology is driving the government's initiatives, and it's also really driving where we want to go.

And the next slide, we just sort of touch on some of those network challenges with some hard facts. So residential solar panels, in AA3 we had none. It was something that people talked about, but we didn't have any. Today we have 1.8 megawatts, 1.8 thousand megawatts, so 1.8 gig. In AA5, that will almost double to 3 gig, so it's just trending upwards.

The behind-the-meter storage, again, AA3 had nothing, modest amounts at the moment, 40 megawatts. That will explode during AA5 up to 700 megawatts as the cost continues to come down and technology improves.

So what that does to renewable generation mix is, we're moving from 9% in AA3 to 40% in AA5. And whilst we look at that and say it sounds reasonable, in an industry that's been stagnant for around a hundred years, that shift in ten years is very, very significant. Especially when you have a very established network that was built for a particular type of energy flow.

Maximum demand will continue to go up, and we're seeing that grow, and it's not growing at an exponential rate, but what we are seeing is maximum demand now actually occurring in pockets, not across the whole network, but in pockets, and we'll continue to address those pockets. And that was something that the review talked a little bit about as well. And so that's something we need to focus on.

Where we're seeing the biggest impact is minimum demand. So a minimum demand of almost 1600 megawatts in AA3 to being forecast, and these forecasts we're doing with the Australian Energy Market Operator, so these are not just Western Power forecasts, a market forecast down to around 600 megawatts. So a significant drop, again, in a short period of time.

Customers connected is moving upwards, but that's not changing the minimum demand. And the age of assets we're seeing, they're staying pretty stagnant. I just should stress, that is focusing on, if you add the forecast expenditure that we're proposing, that's where it stays. Obviously, if we decrease our expenditure, that will decrease our investment, that will increase the average age of our assets, which will have impacts on fault levels and performance in reliability. So that's what our proposal looks like in our forecasts.

And if we could just go to the next slide, minimum demand. This just shows you, and I'm just going to touch on it very, very quickly. We have moved from very stable, reliable source of energy. Big generation was very stable, and very reliable, to solar energy, which is less stable, and much more volatile. It's getting better, and batteries will help in that space. But as I said before, we have 1.8 gig of solar on our network, we are now moving towards a system where we'll have some control over that, but at the moment, it's uncontrolled.

And just to explain the challenge we have with that. There's two main things. Firstly, it's moved our system peak from the middle of the day, until early afternoon. So the peak hasn't gone, it's just shifted to the late afternoon. And secondly, our minimum demand's moved from, as you can see on the table, moved from the middle of the night, into the middle of the day. So there's been a significant shift to our network. But also, the minimum demand's moved to the middle of the day, which was when we actually do have, behind all that solar, a significant load.

And what we saw, and I'll give you one quick example, we had one day where we had a very high cloud cover over the State, and what we saw in the space of half an hour, we lost 650 megawatts of PV, roof solar. So that's 650 megawatts of load that, within half an hour, popped up on our system, and we had to find generation for that elsewhere.

That's something that is very new to our network and something we're really having to challenge and respond to. So that's the different characteristic that comes from solar that we didn't have with our large thermals.

Then the next slide just talks about how we're making balanced decisions. I won't spend too much time on it. It just shows that if we don't keep spending on our current network, the average age of the network will go up. We all know that as the average age goes up, reliability and safety goes down. I think the truth for us, it's also the truth for me, I find my knees aren't the same as they were when I was 21, as I was when I was 37. So we know that's a fact, but we're also having to focus on these new technologies, large-scale batteries, renewables, the distribution system operator, advanced meters, undergrounding, standalone power systems. There's a lot of stuff we're also having to spend our money on. So we're making some balanced decisions.

Next slide. We're not guessing with that, as I said, before. We have really robust systems in place, which show us and help us make our decisions. And the systems help us answer the questions in terms of what assets we have to modernise, what solutions we should employ? When do we actually conduct the work? Do we do it now? Do we do it in the future? And what risks are we willing to accept, both in terms of safety and in terms of reliability as we transition, because we can't do everything all at the same time, because of the price, the price shock impact that'll have. And so we have some really good governance structures and really good risk and reliability methodologies that we use. We're not going to go through that now, but, certainly, we are in discussion with the ERA and taking them through that. And we're happy to take any of our stakeholders through that offline if they want to see more of that.

Next slide is our forecast expenditure. So really, what we're saying is, despite the challenges the networks are facing, it's still lower on an annualised basis than prior access arrangements. So it's basically in total in line with our AA3 actuals, as I spoke before. This is our transmission actuals on the page there, but as I showed earlier, our forecast expenditure is basically in line with our AA3 expenditure. And the expenditure really is designed to maintain safety and service performance. We're not trying to improve that significantly. We will do that in pockets where we have some poor performance, but essentially want to maintain that.

We want to support the changing customer behaviour and requirements, want to facilitate ever-increasing demand for renewable generation, we're certainly going to improve resilience due to climate events. And we know that they're forecast to increase, we've had more heatwaves, Seroja hit, and it was much more south, the cyclone was much more south and much more inland than we've ever seen before. And we've got to make sure that we plan for that. And then we're seeing things like the floods over East. So the weather patterns we're seeing are very, very different to what we've seen in the past. And so, therefore, the solutions we employ have to be different to manage those.

And our key expenditure components for our capital are broken down here. So the distribution network, 3.48 billion, again, has said maintaining safety, performance, investing in standalone power systems, really focusing on undergrounding, and accelerating our advanced meter infrastructure. The advanced meter infrastructure is going to give us a lot of information and a lot of visibility in that low voltage network, which will help us with things like the forecasting challenges that we had leading up to the Christmas period this year.

Transmission 872 million. We're mainly there addressing the aging asset base, but also facilitating additional capacity for customer connections. So we know that there's going to be a lot of users out there that want to connect large loads and large wind and solar and renewable energy projects. And so we need to make sure our transmission network can cater for that.

SCADA network. As I said earlier, this is the one we sweated the most. We've really been, over the years, pumping a lot of money into distribution network and transmission network to keep up with demand and to keep up with safety and reliability risks. And the SCADA network, we've really pushed hard, but we've reached the end of the road with a lot of that equipment, where 69% now is obsolete and not supported by our suppliers. So we're going to have to have a significant increase, 110% increase from AA4 on our SCADA network. And it's really important, the SCADA network. As I said before, it's our eyes and ears of our network. It allows us to control our network, but it also protects our network from things like cybersecurity.

And that sort of is a good segue into our network in terms of our non-network expenditure, which will cover a lot of ICT projects, probably no different to what other businesses are doing. But we're also rationalising our depots, a lot of our depots are very, very old, so we've got to make sure they're fit for purpose and in the right locations, and can cater for

the right equipment going forward. But we really do need a large cybersecurity capability uplift.

As everything becomes more technology-based, we need to be cyber secure. Western Power is listed as critical infrastructure on the security of critical infrastructure legislation that the Federal Government's issued. And that poses very, very strict requirements on us and how we're secure. We're seeing things that are happening across the world, events that are happening across the world, and we know how energy is at the centre of everything people do. And we know that they can become a target if people want to cause disruption in our community. So we have to be cyber secure, and work on that.

Next, I want to touch on customer experience. We can just sort of flick. So we can flick again to the next slide. And I'm just going to go quickly through these. So when we look at customer experience, we don't just look at customers in a homogeneous way. As I said earlier, our network is very different depending on the location. So we do break our network into four regions that have really distinct makeup in terms of assets we've got, and I'm not going to go through those, but you can sort of see the assets that we've got in those areas.

If you can go to the next slide. Those areas also have different challenges and have different opportunities. So various different densities, various different amounts of feeders, different types of feeders, so some have really long feeders that are through very dry, very open into open paddocks. Others have long feeders that go through very high dense bushland. Out to the Goldfields, we have a single 220 transmission line, which exposes us to reliability issues. So each of those areas have very different challenges, but also lots of opportunity for us, which we're going to talk about.

And the next slide shows how we're dealing with those differently. So again, not a homogeneous approach, not a one-size-fits-all, we focus on the challenges, we focus on the assets, we focus on the opportunities, we focus on the customer needs, and we come up with a different plan for each of those areas. And that's an outline there, high-level outline of how different things are being done in different areas. You can see numbers of SPS being installed in different areas, depending on bushfire risk and reliability risk, you can see the AMI rollout really been accelerated, and you can see a lot of undergrounding in the central region, which will also make us robust to some of the climate change.

The next slide is really touching on, if you can just sort of click again, just get the lines, and one more time. Yep. So this is really what Steve was talking about in the key communication preference of customers. So fault calls, as you can see from the site line down the bottom, it pretty much stayed the same, as telephone calls. But what's really escalated is those lines where you can see social media and e-mail, customers are really engaging a lot more on our website and social media, so online. And what they've told us really clearly is we like calling you on the phone, but we really want to start to engage with you more online, get really instant information online, and information through social media.

Everyone carries their phone with them now, they want to be able to just pick it up, push a button and get some information. So we really need to meet that need, but what we don't want to do is also escalate costs significantly. If we can just go to the next slide. Escalate cost significantly in doing that, and we think we can do that in a rational, reasonable way. So what we've done, if we can just keep clicking, one more, thanks. What we've really done is, as you can see below, we've spoken to customers about what they're comfortable with, and they're saying around about 75% of customers, if you can answer about 75% of calls within 30 seconds, we'd be comfortable. Industry average is about 80% within 30 seconds. Our current target is 92%, which is way over industry average, and also way over what customers are saying they'd be prepared to accept.

What we're saying is we're proposing to move down to 86%, so still over industry average still, significantly over what customers are saying would be a reasonable approach. But what that allows us to do is reinvest the capital and resources that we would otherwise put in that area, reinvest that into social media and website. And so we can get same outcomes, the outcomes the customers want, meet the future needs, and with the same costs, so sort of absorb that. So that's where we're going with that customer need.

And then the next slide is about connecting to our network. For those of you that are interested in our policies and contracts, we're not making significant changes in our access arrangement to these documents. The access code was changed in July 2021, led by Energy Policy WA, and they made some significant changes to the access code then, which required us to make changes to our access contract, application and queuing policy, and our contributions policy to reflect the new access code provisions.

We think now that our policies and contracts remain fit for purpose with those changes. So all we're really doing is making some minor adjustments to improve clarity and deliver better outcomes. But we are introducing a new policy, which is a multifunction asset policy. We think it's appropriate the ERA's asked for that, we think it's appropriate that we do that, that we share the benefits of multifunction assets with customers who ultimately pay for those shared assets. So we should share the benefits with those as well.

Next, I want to talk about tariff development, so tariffs, flick over, we can probably flick two slides, and this shows you what we're talking about when we talk about tariffs. We're talking about the 45% in the middle. We're not talking about generation, we're not talking about retailer tariffs, we're talking just about the network tariff. And that network tariff also includes not only what it costs Western Power to maintain our network, and to grow to the future network, but it also includes the tariff equalisation contribution, which is the contribution that we have to collect on behalf of the government, which subsidises the cost of providing power in the northwest of Western Australia. So we also collect that, so a portion of our tariff includes that. So that's what we're talking about.

If we go to the next slide, what we're offering customers. We're offering some new services. Not going to go into great detail, I'm getting close to my time. So we are offering new services, but what that will do is it provides better price signals to customers, but it empowers customers, and that's the key to what we're trying to do, and that's what

customers have told us. We want to be empowered to make our own energy decisions, we want tariffs that allow us to use PV, behind-the-meter battery, electric vehicles, community batteries, we want to start using these technologies more, we want tariffs that allow us to do that.

But the customers are also really keen to say, we also want tariffs that promote fairness amongst us all, because we know that not everyone is going to be able to be an early adopter, or even an adopter of some of these tariffs. And so we also want to make sure that those people, those customers are getting a fair go in our tariffs. But our tariffs really do have to have at the focus of enabling the connection of more renewable generation, because as I said, that's the ideology we're moving towards, and it is something which, as a corporate citizen, Western Power really wants to do as well.

Our proposed tariff path is a really positive outcome for customers, we believe. We know that customers are very sensitive to price increases, less sensitive to price decreases, so we know that customers would like price decreases, from their feedback, but that's not the number one focus for customers. Their number one focus is price increases and service and reliability. So what we're doing over the AA5 period is we'll have a forecast revenue that is providing us prices that are less than inflation, so less than 1% per annum. And also, our prices, on average, are going to be capped at 2% per year in our price group. But if we just look, it's 1% per annum across our price list.

And if we could just go the next slide to our customer feedback on tariffs, and just touches on what I'd said before, that we had really two big forums on prices, which was with our end-use customers and our users, different groups. So the end-use customers, the preference on transition path to cost reflectivity, and that's what we've got to get to, we've got to get to cost reflectivity if we're going to have a sustainable electricity network going forward.

End-use customers were split on the size of movement. As I said, they were sensitive to price increases, so whilst they want to move, transition, and they understand moving to price reflectivity, they probably want to do it on a slower transition path, and they support our price caps to get there. The larger organisations, no doubt, understand the value of tariff reform, more in terms of cost reflectivity as they probably understand business margins a little bit more. They want to keep tariffs low, but they also want to make sure that we're providing incentives for new technologies. So they want to make sure that they want to keep moving forward with new technologies, and that we are providing incentives to allow them to come onto the network and provide those, and not providing barriers so that renewables have a disadvantage over some of the older thermal type. And their concept of a transition path, they still wanted a slow transition, but they were more open to a more moderate path.

And so if I can just quickly flick to our revenue block, the rate of return, I'll just touch on that quickly, I don't want to spend too much time on that, but this is really the main building blocks that build up our revenue. So when you look at how we get to our revenue, the building blocks are return on our assets, our depreciation, our OpEx, the tech, as I

mentioned before, which is just a straight pass through of that subsidy that we have to collect on behalf of the government, our tax that we have to pay, deferred revenue that we collect, a little bit of deferred revenue, and the regulatory incentives, which are pretty much non-existent in this regulatory period.

And if we can just go to the next slide, which just sort of shows how our revenue's changed. So our opening balance is seen on the left in grey, there's a reduction of 437 million through our return on assets with a lower WACC, 8 million increase on OpEx, 360 million increase on depreciation, deferred revenue goes down by 32 million, our incentive scheme goes down by 497 million. The TEC reduces slightly, our tax allowance reduces slightly, and then we get to our final AA5 revenue. So that's how we get there, use those building blocks, and that's what they look like when we start to map them across a waterfall.

Last slide I want to talk about and then we've got time for questions is our return on assets. We're going to use the same approach that we've used in the AA4 period. Our proposed weighted average of cost of capital will be lower, 20% lower at 4.73. We have made two slight exceptions to the practice that was in AA4 which is we're going to adjust the term of the risk-free rate from five years to ten years, and that's consistent with how other Australian regulatory jurisdictions are moving. And the trailing average approach to the allowed rate of return on debt. We're also tweaking that which is also consistent with Australian regulatory jurisdictions. And we've had some really good conversations with ERA on the appropriateness of doing that, and how we reflect energy markets across Australia.

So they're the slides, I moved through them quickly, a lot of information in there, but I think now the important part is question time for the representatives in the room to give you the information that you will need.

JENNESS GARDNER

Thanks for that, Sam. Now we are running a little short, and we've got three questions. I'm just going to ask the one that's got the most popularity next to it at the moment. So the first one of these is a question from Rebecca White, it's for you, Sam. The proposal and issues paper state that additional transmission investment will be needed in response to the WOSP, and this is despite the fact that the second WOSP is still actually underway. But it's very foreseeable that additional transmission network investment is going to be needed to enable the energy transition, particularly in areas where there are large industrial loads with ambitious electrification plans, and that they just can't pack up shop and move to another part of the network. Given all of that, has Western Power undertaken a sensitivity analysis of what additional transmission network development would do to tariffs and cost flow through to generator and end-users.

SAM BARBARO

I'd probably answer that at a higher level, and then what I'll do is I'll pause and let Jackie or Gair Landsborough jump in if they want to go to another level. So actually yes, we have

been doing a lot of work behind the scenes in terms of where our transmission network needs to change and needs to grow.

Certainly, the first WOSP showed a lot of focus on the southwest of our network, but as we're seeing, as we're maturing, and WOSP 2.0 is starting to get a focus, what we're actually starting to see is exactly what the question poses, is there is large industry in the Northwest that can't pack up and move, large industry in the Northwest that will want to electrify, and so we will need to do some work in those areas.

We are starting to develop some plans around that to develop what does that look like? How do we best utilise the network we've got, then what extra infrastructure we need to build to supply that?

In terms of running that through the tariff structure, that's one I'll probably ... I might hand over to Gair or Jackie to talk about. We have done some modelling, but probably not to the extent where we could sit down and say, "This will be the impact." We really are focused on the next five years, but I see Gair's popped up, he might just provide us with a little bit of extra detail.

JENNESS GARDNER

Thanks, Gair, and I will encourage you to be as brief as you can, if you don't mind. We've still got another speaker and two questions. So thanks.

Gair, you're on mute. We need to turn you on. Yeah, should be working now. No, you're still not coming through. Sorry, there seems to be a problem. Unfortunately, we can't hear you. That's a shame.

SAM BARBARO

Perhaps what we'll do, Jenness, just in the interest of time, let's take that one on notice, and we'll provide a written response to that.

JENNESS GARDNER

Thank you, and I'm so sorry Gair. We would have liked to have heard what you had to say. I'm going to move now to the next question.

So this one is from Oscar Carlberg, and it says: given the increased costs, cross-subsidies and challenges distributed solar presents to the grid, has Western Power considered how it could reform tariffs to make them fairer for non-solar customers and incentivise more efficient use and spending on solar?

SAM BARBARO

Yes, I think that is part of what we've taken into account in our current model. So obviously, the more that solar becomes on our rooftops, the less usage you're having. And so, therefore, you've got to move to a slightly larger fixed component. But we are taking ... rather than moving directly to a fixed cost, or a cost recovery position, which would have a very, very large fixed cost component, and smear that across all of our customers, we are taking a balanced approach across all tariffs to try and make sure that we are managing both those who are able to take on the new technologies, and those who aren't.

And we're also providing people with the opportunity to make choices with how they use their energy with some of our tariffs and the time-of-use tariffs that we're putting in place. So I think we are doing that. It's really difficult to manage that completely because you do have very, very different users across the network, but I think we're taking a very pragmatic approach, and capping prices at, like I said, by less than inflation over the AA5 period for all of our customers, I think is a really good outcome, given the challenges that we're seeing through PVs.

JENNESS GARDNER

Thanks for that, Sam. Now I'm going to take one more question that's been sitting there for a little while, and then I'm going to go to Elizabeth, and then I'm going to come back to the rest of the questions. So that will give you time to consider the additional questions that are popping up, which ones you like a lot, and/or come up with more questions of your own.

But I'm going to go to this one, which I think actually is possibly a question for both speakers, both Steve and Sam. But as you've alluded to, Sam, emissions reduction will be driven by policy as well as, if not more so, by customers demanding lower emissions, including our export customers demanding lower emissions through their supply chains. Is the access arrangement process sufficiently flexible to consider both factors to the extent that they may influence Western Power's expenditure requirements? And you can see why I think there might be a regulator's perspective and a Western Power perspective on this one.

SAM BARBARO

Steve, did you want to go first? I'm happy to go second.

STEVE EDWELL

Look, it's a very interesting question. We now have I n the access code, of course, another objective which has been inserted fairly recently, which is the environmental objective. And we touched a little bit on this in the paper we released regarding a new facilities investment test last year. But, look, at the end of the day, we will be mindful to be consistent with government policy, and, obviously, we need to balance that objective with all the other objectives in the access code. So it's a matter of regulatory judgment and balance.

One of the issues I think we'll have maybe with the Western Power's submission is, where Western Power is proposing, Sam, investment based solely on decarbonisation, under that objective, then we'll need to understand that, because most of the investment that effectively has the decarbonisation result is also, or could also, be justified under some of the other criteria. So the challenge really comes, I think in terms of this access arrangement, where we've got investment, which Western Power is saying, "Look, government's got this policy, we want to spend a bunch of money, and we're doing it solely on the grounds of decarbonisation." And there's a big gap there in terms of other benefits that are flowing to users.

So that's the challenge we've all got, and at the end of the day, the answer is, well, we'll need to exercise our regulatory judgment in terms of where we land on that.

SAM BARBARO

So I'll answer really quick because the first thing is, I think my short answer is, yes, in the main, we think that we're moving towards a decarbonisation, decarbonised world with the submission we put forward, the proposals we put forward. So clearly, we think that it's approvable, and, therefore, we think the regulatory framework does cater for that.

I think the only challenge for both the regulator and ourselves, and this is a mutual challenge, and Jenness and I have chatted about this previously, is where we're trying to decarbonise those large customers, and you're trying to move towards building maybe a large transmission line, and to connect up a whole bunch of industry to allow them to get renewable energies. And the network is very much based upon user pays, and the customers being ready when you move, as opposed to the old colloquial, build it and they'll come, type approach. And so that's probably where we both have a bit of a challenge in terms of it.

When the WOSP 2.0 comes in, that's probably where the regulator and ourselves will need to just work towards, how can we get some of that large infrastructure built to enable that decarbonisation. But certainly, on reforming our current network, we do think that the framework is sufficiently flexible.

JENNESS GARDNER

Thank you both. And thank you, Greg Ruthven, for that question. I'm sorry, I forgot to acknowledge it at the outset of the question. I am now going to move to asking Elizabeth Walters to give a slightly shorter presentation than perhaps she had planned on so. So bear with Elizabeth as she takes you through some specific, more specific issues in assessing the expenditure. Thank you, Elizabeth.

ELIZABETH WALTERS

Thanks, Jenness, and good morning, everybody. I'll try to do this as quickly as I can. As you'd expect, expenditure has the largest effect on customer bills. Using the AA5

proposal, operating expenditure makes up about 30% of the target revenue, it feeds directly into target revenue, whereas, capital expenditure feeds through via depreciation and return on investment. And the combination of both of those things make up about half of the proposed target revenue for AA5.

The access code includes provisions to ensure the target revenue only includes costs that would be incurred by a service provider efficiently minimising costs. And Western Power must also demonstrate that its proposed expenditure is either required for safety and reliability, or, otherwise, that the costs will be offset by additional revenue from new demand, or, probably most importantly, there's a benefit to those who generate transport and consume electricity that justifies an increase in prices.

We're required to consider the long-term interests of consumers, so we'll be considering the effect of the proposal over the long term, and not just what would be the lowest cost during this access arrangement period.

Next slide, please. We've not formed a view yet, as Steve said, on Western power's proposal, we're still assessing all of the information that's been submitted and getting further clarification and detail about the proposal from Western Power. We use a range of techniques to test the efficiency of the expenditure, including using technical consultants to provide engineering advice. Western Power has been subjected to this incentive-based regulation for about 15 years. The framework encourages it to minimise costs during an access arrangement period as it can keep the benefit of outperformance during the period or incur the cost of underperformance during the period, and customers then benefit from lower costs in future periods.

This chart, which I saw partially in one of Sam's slides, shows total actual OpEx and net CapEx since regulation commenced and the proposed expenditure for AA5. As you can see, OpEx was trending up slightly during AA1 and AA2, then started to drop back down through AA3 and the early parts of AA4, and now we're at a state with the AA5 proposal keeping it relatively flat and almost back at a similar level to what it was in AA1. The capital expenditure is much more variable over time because it reflects different investment drivers that were important at those particular points. Next slide, please.

For OpEx, we'll use the base, step, trend method to assess whether it's efficient. So that firstly entails establishing what the efficient base OpEx is. Western Power proposed using the most recent financial accounts, that's the 2021 year, and they've adjusted it for atypical costs. Then there's a number of items that get added onto it. I won't go through those in detail, but you can see in the chart, the biggest element is step changes for ongoing costs, and then some non-recurrent OpEx. And we've also got labour escalation and network growth offset by a productivity improvement.

We'll be testing their proposed OpEx very thoroughly, benchmarking where we can, and ensuring any increases are reasonable, and trying to make sure that Western Power has adequately taken account of any efficiencies that might come from its investment program.

There's further details in our issues paper and we'd welcome stakeholder views and any information that you might have to assist our review.

Next slide, please. This chart shows capital expenditure by investment category. We've annualised it for comparison purposes as AA1 and AA2 were three-year periods, where AA3, 4 and 5 are five-year periods. You can see that in AA1 and 2, increasing peak demand was still a feature which resulted in growth expenditure being comparatively high. Then when we got to AA3, there was a large uplift in asset replacement for wood poles to address safety issues, and although growth reduced, it did have the Midwest Energy Project, which was the largest transmission growth project Western Power has undertaken. In AA4, the wood pole expenditure returned to more normal levels and there were no significant growth projects.

The level of expenditure that Western Power has proposed for AA5 is more similar to earlier access arrangements, but the mix of expenditure is quite different. Growth is similar to AA4, but there's uplifts in asset replacement metering, SCADA comms. and IT.

Next slide, please. Our issues paper called out four new or one-off significant areas of CapEx. Two of these relate to combining the need to address aging assets with the opportunity to commence the transition to the new modular grid that Sam spoke about.

In the new modular grid, Western Power envisages the tightly meshed urban network will be mainly underground, and as Sam discussed, the network renewal undergrounding program is designed to start this process.

The modular grid also envisages autonomous standalone network for some areas, and as Sam discussed, Western Power has now commenced its rollout of standalone power systems. And you can see the values there that are included for AA5.

The other two areas relate to increasing data and visibility of the network that Western Power considers is necessary to modernise the grid, and we understand quite a lot of it is also around obsolescence of the existing systems, and they're proposing to accelerate the rollout of advanced meters so that most properties will have an advanced meter by the end of AA5. So these are also quite large expenditure items in the AA5 numbers.

For all these projects, Western Power will obviously need to demonstrate that it is the most efficient option given everything that they've been able to consider. If the expenditure is not linked to safety and reliability, it will need to demonstrate there's a benefit that justifies that increase in expenditure.

Next slide, please. As Steve discussed, the environment for this review is quite different from previous reviews. We know the future grid is likely very different from today, but there's many uncertainties and judgments to be made about what that might look like. As DER and new technologies are replacing traditional network assets, the historical planning processes and costs are not necessarily a good benchmark for future costs.

There's also, as has just been talked about, very relevant work currently underway that won't be completed until after our review finishes, particularly the WOSP, that will address quite major issues such as how to transition to zero emissions, changes in demand for electrification of the economy, all of which can have implications for the network requirements. And the work being done around developing a distribution system operator might also affect network requirements.

As Sam has discussed, they consider that the approach they've developed for grid strategy provides a roadmap that minimises the whole-of-life cycle costs and regrettable investment by identifying the right technology to use at the right place and right time. It's not our role to decide what the configuration of the network should be, but we do need to be able to determine whether the proposed investment is reasonable, properly timed, and based on sound cost estimates. We need to be mindful that greater use of DER and new technologies and the transition to the modular grid could alter the mix between OpEx and CapEx, and make sure we set the allowances accordingly. And we need to ensure that Western Power's proposal minimises the risk of expenditure and assets that are not required in the long term or not fit for purpose. And as Steve has already said, we're very interested in stakeholder views on the assumption strategy and proposed expenditure that Western Power has put forward.

JENNESS GARDNER

Brilliant, thank you very much, Elizabeth. That's an excellent, slightly shortened version of a very comprehensive presentation. Now I see that we have two questions left, so I'm proposing to go to the first one in the last couple of minutes that we've got, and I will take a couple of minutes to wrap up as well.

So the first question is from Linh Nguyen. There's a fair focus on the next five years only taking us to 2027. For government agencies and industry with interim emission targets, this leaves only two to three years for a mad rush to get infrastructure underway to meet interim targets. What's the plan for this? And I'll be happy to let any of our speakers choose which one wants to go first on this one?

STEVE EDWELL

You go first, Sam.

SAM BARBARO

Yeah, thanks, I'll be really quick. I think what this question just shows is, it really supports our position that we've got to spend now to transform the network, and enable our customers to meet their targets. So I think any deferral of projects, or expenditure in these areas will really create that panic, and also result in some of those targets not being met. So I think the question sort of hits the nail on the head in terms of where our proposal is coming from.

STEVE EDWELL

Yep, makes sense. You know, we'll just test that. We're interested in, obviously, investment certainty as much as possible. Obviously, not only for Western Power, but for people wanting to invest in our electricity system. So it's incumbent upon Western Power's proposal and our response to it to reduce as much risk out there for investors as possible. So it's something that's front and centre for us.

JENNESS GARDNER

Thanks for that. And our last question, I'm not sure whether or not you'll have these numbers at your fingertips, either of you, but let's have a go. How much of the network percentage of value ... sorry, this is a question from Noel Schubert: how much of the network percentage of value has been gifted to Western Power by developers and capital contributions over the years? And so in effect, already paid for by others, is the question?

SAM BARBARO

Yeah, thanks, Noel. I don't have the actual answer on that. I mean, the gifted assets, obviously, and capital contributions don't go on our RAB, so we don't' earn a rate of return on those. But the one thing that I'll say that Noel knows this, but I'll answer the question in this way is that once an asset gets gifted, we have to operate and maintain it. And so there is an ongoing expenditure that comes with that asset that we need to factor into our revenue and also factor into our expenditure profile.

So yeah, while it's gifted in the first instance, it then is ours and we have to make sure that it stays safe and reliable.

JENNESS GARDNER

Thanks for that. Steve, have you got any comment on that one?

STEVE EDWELL

Only to say the number I think can quite easily be calculated. There's a number in all of the access arrangement decisions. So I think we could pull together and add them up and send it to Noel after the session.

JENNESS GARDNER

So standby for the draft, I think, was the response to that one. Thanks very much for that. And that's the end of the questions.

Can I just thank all three of our speakers. I really appreciate the time and effort that you've put into developing your presentations today and making yourselves available.

I'd really also like to thank everybody who's attended. We've had around about 80 people from what I can gather online, and that's a really awesome indication of the interest that's in this particular issue.

You can find more information about the access 5 review process on the ERA's website, and we'll also be sending a link to the issues paper to everyone who's attended this forum. The issues paper will look at everything that we've discussed today in a little more detail, and it also has details about how to put in a submission. We'd like to encourage anyone, irrespective of how expert you may be, to feel free to put in a submission on anything that we've covered today, or any aspect of Western Power's proposal.

As you've heard, there are a broad range of issues we need to consider and a very diverse group of customers and other stakeholders who use this network. So please feel free to limit your comments to the particular areas that you have knowledge of or experience of because every piece of feedback is appreciated. Submissions close on Wednesday, the 20th of April 2022.

After that, we'll likely head into some of those regional areas that we've heard mentioned today. I know that Steve is extremely keen, in particular, to hear about the experiences of people from the edge of the network.

We'll be holding another forum like this, and I note that at least one of our attendees today is very keen on that, so thanks, we'll look forward to your participation. And we'll be opening another round of public consultation after our draft decision, which we expect to publish in around about September.

Again, thank you very much for coming today, and for your questions. If you have any more, we're always happy to help, and you'll receive our contact details when we send through the issues paper after the meeting. Thank you and have a lovely day.